FAA | AVIATION NEWS

MAY 1962

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FAA | AVIATION NEWS

FEDERAL AVIATION AGENCY

MAY 1962

THE FLIGHT FRONTIER

American aviation has reached a level of growth and maturity that will serve as a solid base for a new stage of expansion across a constantly broadening frontier. As air technology has solved old problems, it has opened seemingly endless new possibilities in the realm of flight. And as technology has advanced, aviation in the United States has emerged as an increasingly important element of the national economy. But with its maturity, it retains a vigor that can keep it from becoming staid and can provide the force for progress.

The prospects for aviation in the United States are limitless. The number of our 180,000,000 citizens who fly airplanes or ride in them is still relatively very small —less than 15 percent. But this fact carries with it the obvious corollary that the vast majority of the American public remains as a potential market.

The Federal Aviation Agency will play a key role in fostering this growth. In the next few years, the FAA will be assuming increasing responsibility for assisting and managing all of the Nation's air traffic, both civil and military. And through these coming years, the Agency will be engaged in an intensive effort to modernize the Nation's air traffic management and navigation system guided by the Project Beacon report. Airports also will be receiving increasing attention. At the same time, the FAA will be assuring the soundness of new types of aircraft, writing progressive rules for their operation and making every effort to see that the airmen who fly them are competent.

Research is vital to provide the technology upon which U. S. aircraft of the future will be based. The FAA is sponsoring work in such important areas as the supersonic transport and V/STOL aircraft. These and other programs will help build for the future.

All of this will have a profound effect on aviation progress, and it is vital that the whole community understand what the FAA is doing and why. Such understanding also is vital to promote airman cooperation with Agency safety programs. You are reading an improved version of *FAA Aviation News*. It is dedicated to drawing a clear picture of Agency policies and programs to help the FAA join the rest of the air community in the united effort that is essential to national progress in flight.

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Cover—Responsibility for proper maintenance is in the hands of some 75,000 active FAA-certificated mechanics, whose skill and dedication keep the Nation's aircraft mechanically safe.

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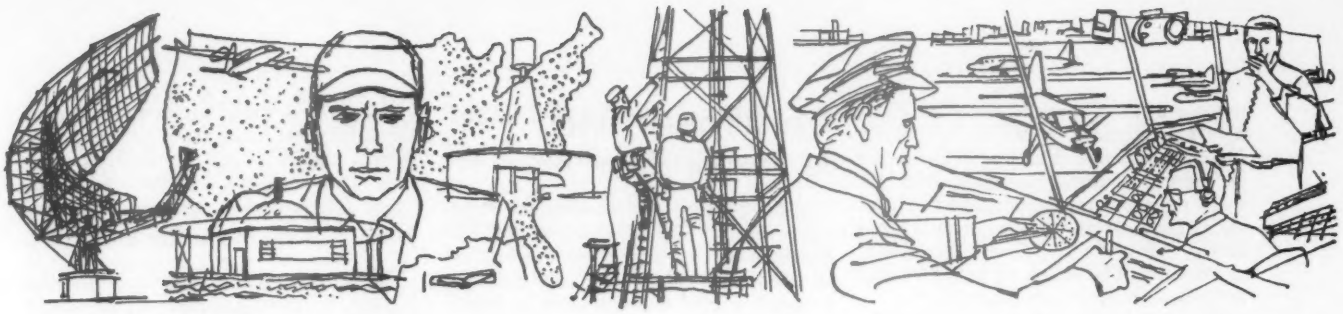


NATIONAL AIRPORT SYSTEM PROBLEMS REQUIRE CONCERTED AVIATION DRIVE

The Nation's airport system faces problems which call for a concerted aviation community drive to preserve airports from current threats and to provide the expanded ground base required to assure civil aviation's growth.

Noise and real estate encroachments are two of the most serious threats to airports today. The problem of the future lies in providing the additional airfields —Project Horizon estimates five major terminals and 150 general aviation fields —needed through 1970 to serve the growing U. S. air fleet.

Local community understanding and cooperation are keys to the problems, and it will take special efforts by all of aviation to cultivate this vital local environment. In addition, some special solutions must be found to the noise problems which plague the larger air terminals.

FAA Administrator N. E. Halaby recently told the Airport Operators Council Spring Conference this "is a job we have together: to develop the safest and most convenient kind of airports in the public interest; to develop a useful, supportable network of these airports in the national interest, and then to establish, in the minds of a far greater number of our citizens than now understand, the critical need of these airports in the decade to come."

Two recent developments point up the problems faced by the national airport system:

- Mitchel Air Force Base was lost to aviation when a strong anti-airport campaign inhibited local governments from sponsoring a badly needed general aviation field on part of the base, which was declared surplus to military needs. Lack of local understanding and foresight cost the Nassau County section of Long Island an airfield it needs now and will need even more in the future.
- Greater Pittsburgh Airport, Allegheny County, Pennsylvania, was declared by the Supreme Court to be liable for damages suffered by a man whose home was directly under a runway glide path and vulnerable to aircraft noise. This was the decision in the Griggs case.

Balanced against these problems is the hopeful situation in Houston, where 18 far-sighted citizens anticipated the need for another major airport and bought a desirable site for it. They sold it to the city at cost. Now Houston is moving toward a 1965 opening date for its Jetero Airport which is being designed and zoned carefully to avoid airspace, noise and any other problems which can be anticipated. Halaby praised this initiative to the AOC meeting, calling the Houston citizens the Pilots of Jetero.

These incidents illustrate the problems facing airports, and the way community action can solve or avoid them. In aviation's efforts to prompt and support such local action, the FAA plans an important role. Administrator Halaby established a separate Airport Service within the Agency last year to underline this fact.

Along with showing communities how airports are important to their economies, the FAA provides the money and technical advice they need to make their plans bear fruit. This is done largely through the Federal Aid to Airports Program under which the FAA matches local funds, generally on a 50-50 basis. In addition, the Agency pays the full price of landing and navigation aids for airports.

The FAA proposed an extended and considerably expanded airport aid program last year, and Congress authorized $75 million annually for three years, beginning with the current fiscal year. The Agency is working on legislation that would authorize extension of the Federal Airport Act for at least another three years. This approach represents a reversal of the former philosophy of gradually phasing out the airport aid program.

Discussing future legislation, Halaby has noted that the Griggs decision "poses for Congress the question whether their action last year was adequate to needs perceived this year."

Along with this general support, the FAA has limited authority to help with such specific problems as noise. No Federal agency his direct authority to regulate noise levels, but the FAA can regulate flight paths to avoid densely populated areas and thus protect those on the ground from noise. This is done in cooperation with airlines, pilots and airport authorities. The Agency works closely with the National Aircraft Noise Abatement Council and other noise abatement groups. In all these efforts, the FAA is careful to see that flight safety requirements are paramount in any agreements.

Studies funded by the FAA will produce such data as noise characteristics of specific types of aircraft, and this information when it is ready will be passed along to the industry.

The most effective way to solve the problem is to cut engine noise, and General Electric and Pratt & Whitney are working on various approaches. It's easier to do, of course, when the engine is being designed. That is why reasonable sound levels will be a primary design goal for any new engine developed to power a U. S. supersonic transport.

Proper zoning is important in the drive

N. E. Halaby was principal speaker at Airport Operators Council Spring Conference. At right, Sen. A. S. Mike Monroney, Chairman of the Senate Aviation Subcommittee.

to reduce noise hazards. Here, however, only local authorities can act. The FAA can advise on this issue, and FAA studies on land use, when combined with the FAA noise studies, are expected to produce standards of land use planning and zoning that will permit local governments to minimize the effects of aircraft noise in areas adjacent to airports.

The Agency also is examing airport safety standards to determine whether ground facilities are adequate to handle emergencies. This could produce a rating system for airports, although the project is still in the early stages and no standards have yet been proposed. They will be worked out after consultation with airport operators.

The regional airport concept is an important new development in the Federal Government's approach to the national airport system. The FAA and the Civil Aeronautics Board have been working together on it, and President Kennedy endorsed it in his recent Transportation Message to Congress.

Under this new approach, cities within reasonable distances of each other are encouraged to pool their needs and resources to develop a single airport which can serve a whole complex of communities. Several cities—Greenville and Spartanburg, S. C., Raleigh and Durham, N. C., Minneapolis and St. Paul, Minn.—have done this in the past.

Where it applies, the regional concept offers a more efficient and economical airport for the communities and operators involved and for the Federal Government. Prosperous, efficient airports find far greater support on the local level than marginal facilities which may be losing money for an operator or require a municipal subsidy.

Halaby told the AOC meeting that "in the future, the FAA is going to rely heavily on the regional concept of airport planning and development and will not encourage local requests for Federal aid for airline airports when the situation is clearly unpromising."

In March, the CAB launched an investigation of airline service in the New England area to consider designating some 20 New England airports regional airline service airports. Such a determination will be made if the Board finds that the airport can serve two or more adjacent cities efficiently and economically and without causing hardship to either the cities or the carriers involved. During this investigation, the FAA will provide the CAB with data showing what it would cost to bring the airports involved up to minimum airline capability, both in Federal and local funds.

Free Altimeter Check At Reading Fly-In

Light plane pilots attending the Reading Aviation Service's 13th National Maintenance and Operations Meeting are invited to take part in air-ground altimeter accuracy checks that will provide important information for pilots and research data for an FAA altimetry study .

An FAA cameraman and air controller will be stationed on the grounds of a drive-in movie theater six miles southwest of Reading (Penna.) Airport, center of activity for the fly-in. Their mission will be to measure each participating plane's altitude on film as it flies over, at the same time recording the plane's altimeter reading reported by radio.

Planes taking part also will receive free altimeter calibration and an altimeter static-system check on the ground at Reading Airport after the airborne testing.

Pilots who want to participate in the altimeter-checking should contact the Reading tower (119.9 m.c.) or Reading approach control (109.5 m.c., plane transmit on 122.5 m.c.), which will provide barometric setting for altimeters and vector planes to the altimeter check air controller (123.0 m.c.).

Individual results will be mailed only to the pilots. Compilations of the data will be available to the aviation community without identification of aircraft or pilots.

The checks will be run Thursday, June 7, noon to 8 p.m.; Friday, June 8, 8 a.m. to 8 p.m.; Saturday, June 9, 8 a.m. to 2 p.m.

Hearing Officer Concept, Open Dockets, Are Outgrowth of Project Tightrope

Improvements in the FAA's enforcement and rulemaking systems are well under way as a result of quick Agency action on recommendations in the Project Tightrope report.

Last month, the first formal hearings were requested under the new hearing officer system. Two pilots facing possible suspension of their certificates will have full hearings before independent hearing officers who have the power to decide the cases for Administrator N. E. Halaby, subject to his review.

At the same time, the docket on proposed safety rules has been opened to the public during the period set for written comment. Formerly, the docket was closed at this time, but now it is open throughout the rulemaking process so all written comments can be inspected anytime. This conforms with the practice already followed with airspace rules and which is followed by other regulatory agencies.

Earlier this year, Halaby established the Agency Regulatory Council to serve as a central forum for the FAA rulemaking process. This group sees to the orderly and timely processing of proposed rules, assures that they are consistent with Agency policy and makes sure they are clearly required to promote air safety. The Council also advises the administrator on controversial questions which can't be resolved at a lower level.

All these moves have resulted from Project Tightrope, an independent task force study of FAA enforcement and rulemaking philosophy and practice. Halaby initiated the study shortly after taking office as a means of assessing the Agency's relatively new rules approach in light of its first two years of experience.

The bulk of the report's major recommendations issued last November now have been implemented.

The hearing system is a departure from the former practice of suspending or revoking certificates on the basis of informal conferences between the airmen involved and FAA enforcement attorneys. Now an airman facing suspension or revocation can ask for a formal hearing within 15 days after FAA issues its notice of proposed certificate action, or he may request an informal conference with an Agency counsel. If the latter is conducted the airman may still request, within 10 days, a formal hearing, and at the same time submit an answer to the allegations contained in the notice.

The case against the airman must be presented by an FAA attorney who bears the burden of proof.

The airman, or his counsel, has the right to present the case or defense by oral or documentary evidence, submit evidence in rebuttal, and conduct such cross examination as may be required for a full and true disclosure of the facts. Witnesses may be subpoenaed by either party and either party may withdraw at any time prior to the hearing.

If, at the conclusion of the formal hearing, the Hearing Officer's order amends, modifies, suspends or revokes the airman's certificate, the order will also advise him of his right of appeal to the Civil Aeronautics Board.

One of the first two hearing officer cases involves a commercial pilot facing a suspension of his certificate for 30 days. He has been charged with operating a

helicopter within the Lake Charles, La., Control Zone last December when the ceiling was less than 1,000 feet and endangering a scheduled airline passenger flight.

In the other case, a private pilot faces a six-month suspension for an incident at North Brunswick, N. J., Airport. While carrying four children he is charged with taking off from a runway other than the one in use, thereby creating a collision hazard with an airplane about to land. The landing aircraft was forced to abandon its approach.

Proposed Increase in Aviation Tax Would Help Pay for Airways System

President Kennedy's plea for increased aviation taxes to help pay for the Federal Airways was renewed last month in his Transportation Message to Congress.

These new taxes—or user charges—are proposed as a means of recovering about half of the airways costs allocable to civil aviation. The civil flying share of total costs is estimated at about $329 million for fiscal 1963.

Under the new plan, the two cents per gallon tax on aviation gasoline used by the airlines would be retained, and it would be extended to jet fuel, which is not presently taxed. General aviation's gas tax would be raised from two cents to three cents a gallon.

The 10% transportation tax on airline tickets would be reduced 5%, and a new 5% tax would be imposed on airfreight waybills. This would impose a charge on cargo users for the first time. All of these fuel, ticket and waybill tax changes would take place January 1, 1963, providing time for the Civil Aeronautics Board to determine whether any fare adjustments would be in order.

The combination of taxes on users and operators was proposed as the fairest practical way of charging in rough proportion to actual use of the airways. Passenger and cargo rates are set on a mileage basis, and fuel consumption is a good measure of the amount of flying an aircraft does.

During the past few years, the FAA has substantially increased spending on improving the airways in an effort to overcome several years of serious neglect. This heavy federal expense is expected to continue through the next five years as immediate improvements continue and as the Project Beacon program (see p. 13) gets fully under way.

Special Assistant Named For General Aviation

The Nation's largest group of airmen will get more attention with the appointment of William J. Schulte as Special Assistant for General Aviation to N. E. Halaby, FAA Administrator.

Other recent appointments include:

- Gordon M. Bain, veteran airline and government executive, named Assistant Administrator for Appraisal. He is responsible for evaluating FAA operations —both management and technical—in the field as well as in Washington.
- Nathaniel H. Goodrich appointed General Counsel of FAA, succeeding Daggett H. Howard who resigned to join a Washington law firm.

Schulte, a businessman and rancher from El Reno, Okla., has been active in general aviation for nearly 30 years. He soloed in 1933 and currently holds a commercial pilot's rating. He uses light airplanes extensively in connection with his business and ranching operations, and has logged more than 3,000 hours.

Schulte is on the Aviation Committee of the El Reno Chamber of Commerce and is a member of the Silver Wings, a group of pilots who have been flying solo for 25 years or more. He has also been associated with the Flying Farmers.

New System to Convert Weather Data to Voice

A new device to convert teletype weather data into voice messages for automatic broadcast to pilots is under development. Bell Aerosystem Company of Buffalo, New York, will design and build the prototype equipment under a $292,-856 FAA contract.

The equipment is designed to pick up teletype weather messages from the FAA-operated weather network and translate the messages quickly and automatically into voice communications for broadcast to pilots over VORs.

Specifications require the equipment to accept data from FAA weather circuits and handle it at 100 words per minute. In addition, it must accept data from a secondary source for updating, correcting and message insertion by the operator. The equipment is to be capable of recording and storing up to 30 selected incoming weather messages of up to 69 characters each in length.

Under the present system, information from weather circuits is broadcast to pilots from 410 Flight Service Stations 15 minutes and 45 minutes after the hour through the VORs.

The new equipment, if successful, will substantially improve and speed-up the latest available weather information to pilots in flight, while at the same time freeing Flight Service Station personnel from the twice hourly duties of reading the weather sequences over the air.

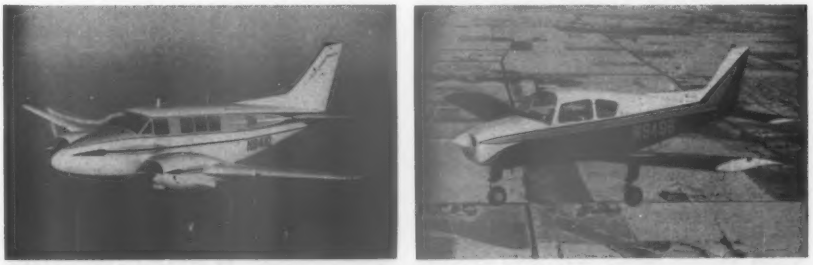
The prototype equipment is scheduled to be delivered by March 15, 1963 for test and evaluation.

DEEP DIVING PRESENTS THREAT TO HIGH FLIERS

Flying a pressurized aircraft within 24 hours after skin diving can result in decompression sickness (bends). On record is an incident where a crew flying such an aircraft in the late afternoon, following a day of diving at depths of 20 to 30 feet, became incapacitated in flight. Fortunately, the flight engineer had greater tolerance and was able to fly the aircraft. Twelve hours later, however, he too was stricken.

Pilots who are SCUBA fans, or those thinking about it, are urged to explore the matter with a flight surgeon.

NEWCOMERS IN THE AIR



Two additions to the general aviation fleet are these all-metal Beech airplanes certificated by FAA. The Queen Air 80 (left) has a top speed of 252 m.p.h. and a range of 1,330 miles. It can carry seven to nine. The four-place Musketeer 23 has a top speed of 140 m.p.h. and a range of 990 miles.

INSTRUMENT TRAINING AID AVAILABLE FOR HOME STUDY

PILOTS, TRY THIS ONE FOR SIZE

You are approaching Lambert Field, St. Louis, on an IFR flight plan. (*Your Approach and Landing charts give you the minimums—Runway 24, straight-in approach without glide-slope receiver, ceiling 400, visibility 1 mile; Runway 12, circling approach, ceiling 500, visibility one mile or for a straight-in approach, ceiling 400, visibility one mile.*) Flying a light twin with two VHF transmitters, two omni receivers, an ADF receiver and a marker beacon receiver, you are cleared for an ILS approach to the airport, *Runway 24*. Approach Control vectors you from the St. Louis VORTAC to the localizer course for a straight-in approach. St. Louis weather is ceiling 500, visibility one mile, wind 200 degrees—ten knots. Approaching the Outer Compass Locator inbound, you are advised that the ceiling and visibility are now 400 and one, wind 140 degrees—20 knots, landing Runway 12.

How has the weather change affected your minimums?

What is your correct course of action after receiving the last weather report?

If you do not have the right answers (see box, bottom of page), you need to study FAA's Instrument Pilot Exam-O-Grams.

This problem is an excerpt from the first Instrument Pilot Exam-O-Gram sent free to pilots by FAA.

The Exam-O-Gram is a training aid that covers specific operational situations and related aeronautical knowledge similar to those encountered in the Instrument Pilot Written Examinations. They are, in effect, simulated instrument flights, including emergencies and air traffic control procedures.

Areas to be covered in the new Instrument Pilot Exam-O-Grams are the various types of instrument approach procedures, use of radar in making instrument approaches as well as in controlling instrument traffic, new communications procedures and rule-of-thumb methods for navigation or position estimates by instrument pilots.

Those who want to learn, catch up or brush up their instrument flying techniques may be placed on the Instrument Pilot Exam-O-Gram mailing list. Write to the Federal Aviation Agency, Operations Airman Examination Staff, 621 North Robinson, Oklahoma City, Oklahoma.

LIGHTING the "BLACK HOLE"

New National lighting standards for airport runway centerlines and touchdown zones adopted by the FAA are designed to guide pilots through the "black hole" between approach lights and touchdown during low visibility landings.

Centerline lights, installed at 25-foot intervals over the entire runway length, will be used as a reference by incoming pilots to judge direction, roll and pitch during approach and landing. They also will give guidance to departing pilots.

The "black hole" will be filled with touchdown zone lights installed on the runway and shining toward the approach. These will extend inward 3,000 feet and will consist of three-light barrettes spaced along the runway at 100-foot intervals, 30 feet on each side of the runway centerline lights. Five-foot spacing will be provided between each light in the barrette.

Rules and Regulations

Proposed: A rule requiring all U. S. civil aircraft (except certificated U. S. international airlines) operating over and within another nation to comply with the flight regulations of the country concerned. Such flights (with certain exceptions) would be required to obtain a Foreign Flight Authorization.

Comments on the proposed rule-making should be submitted in duplicate by June 18, 1962 to the Docket Section, FAA, Washington 25, D. C.

Issued: An amendment to Part 60 of the Civil Air Regulations. Effective May 1, 1962 a new set of procedures will be followed in the event of radio communications failure. Details to be published in the Flight Information Manual.

HEAR IT NOW . . . .

Simultaneous Code/Voice Station Identification

Pilots who hear code and voice on their receivers at the same time need not worry that something has gone wrong with ground stations—or their own radios for that matter. The simultaneous broadcast of code identification and the half-hourly weather broadcasts from the VORs will be by design and not by error.

Following the favorable reaction to a nationwide test over 20 selected VOR stations, FAA is now adding the simultaneous feature to all of its 760 VORs, TVORs and VORTAC stations through minor changes to existing equipment.

Easily understood code/voice provides pilots with positive station identification and the latest available weather information at the same time. For many years the station code identification was erased during the twice hourly three-or-four minute weather broadcasts. High speed aircraft were without positive code identification during the periods the weather broadcasts were being made.

MAJOR NAVAIDS COMMISSIONED IN MARCH

VORTAC: Linden, Va.; Sabine Pass, Tex.; Baton Rouge; Fayetteville, Ark.; Columbus, N.M.; Tucumcari, N.M.

ALS (Airport Lighting System): Hyannis, Mass.; Elmira, N.Y.; Cleveland; Bristol, Tenn.; Orlando; Chicago (O'Hare).

SFL (Sequence Flasher Lights): Hyannis, Mass.; Elmira, N.Y.; Cleveland; Tallahassee; Bristol, Tenn.; Lafayette, La.; Orlando; Chicago (O'Hare), Lansing, Mich.; King Salmon, Alaska.

AIRPORT CONTROL TOWER: Morristown, N.J.

VOR: Harcum, Va.

ILS (Instrument Landing System): Louisville, Ky.; Williamsport, Pa.

VASI (Visual Approach Systems Indicator—former designation Visual Glide Slope Indicator): Asheville, N.C.; Chattanooga; Memphis; Miami; New York International; Oklahoma City; Tulsa; Albuquerque, N.M.; Pittsburg.

TVOR (Terminal VOR): Chicago; Minneapolis.

Answers:
Instrument Pilot Exam-O-Gram

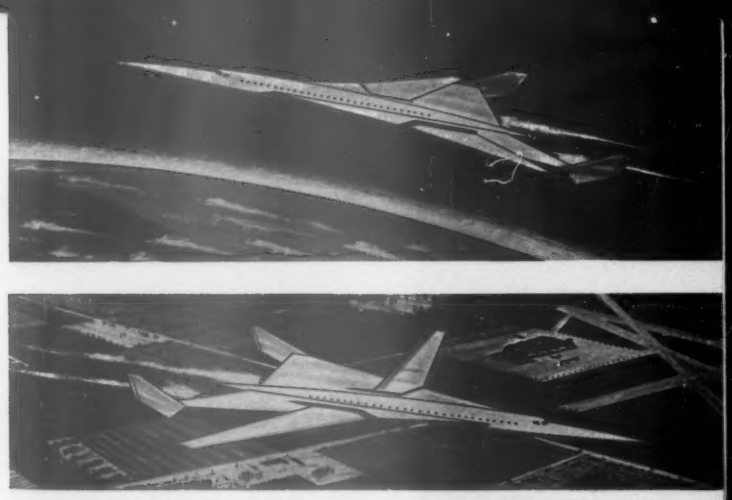
Q. How has the weather change affected your minimums?

A. Though the ceiling is not below your straight-in minimums, you must now circle to land on runway 12. The circling minimums to runway 12 are 500–1; with the ceiling reported at 400 feet, you cannot complete either a circling approach to runway 12 or a straight-in approach to runway 24.

Q. What is your correct course of action on receipt of the last weather report?

A. (a) Execute a missed approach and request clearance to alternate, or (b) request a radar vector for a VOR approach to runway 12. Your chart lists 400–1 as straight-in minimums for aircraft equipped with dual omnis and receiving St. Charles Intersection. If you are faced with deteriorating weather and/or prolonged holding, request clearance to your alternate.

SUPERSONIC TRANSPORT RESEARCH MOVES AHEAD



Supersonic design may have variable sweep wing that could be swept back *(top)* for Mach 3 cruise, then extended laterally *(bot.)* to increase lift for lower speeds.

The next step beyond current jet airliners in air transportation—the supersonic transport—is a big one. Government and industry moved forward this month with a research program that ultimately will help determine whether the government should support the development of such an airplane and if so, how it should proceed.

By the end of May, a government team headed by the Federal Aviation Agency will have signed contracts for $11 million worth of exploratory research into the diverse, difficult problems which must be answered before the President and Congress can judge whether the nation should invest in a full scale program.

It already has been established that a supersonic transport is feasible in the purely technical sense. The problem now is to determine whether it is possible to develop an airplane that would be safe and economical as an airline transport.

Last summer, the President's Project Horizon task force wrote a set of national aviation goals for the 1961-1970 decade. The group pointed out that continuing U. S. leadership in air transportation calls for development of a supersonic transport in this country. The report also urged a team approach unique in American civil aviation experience—government financial support to supplement industry resources because of the tremendous task.

There are strong indications that a successful supersonic transport could tap a $3-4 billion world market. This fact—plus the prestige value—has not been overlooked by foreign governments. The British and French are negotiating a program to design and build a supersonic transport with present aluminum aircraft technology that would cruise in the Mach 2 range. The Russians also are working on a commercial supersonic airplane.

Early in 1961, a study program was begun by a government team headed by the FAA and including representatives of the National Aeronautics and Space Administration and the Defense Department. A steering group sets policy, and a working level program management office executes it. The FAA obtained $11 million from Congress for research work in the current fiscal year, and these funds will pay for the industry contracts being signed this month. Another $25 million has been requested from Congress to continue the most promising elements of program in the next fiscal year.

Advisory groups have been set up to make sure the government team has the best available information and advice on all facets of the program. The Supersonic Transport Advisory Group, which works with the policy-makers, includes private citizens with backgrounds in airline management, aeronautical research, finance, airport operations and both airline and supersonic test flying. On the working level, two top airline executives are advising the program management office.

In addition to the contract studies, industry will be providing much information developed on its own. A very substantial amount of NASA's research will apply, as will military work with supersonic airplanes and especially the Air Force B-70 Mach 3 bomber.

Structures, aerodynamic shape and propulsion systems are among the problem areas being explored. A successful supersonic transport must have a structure and skin—probably built of steel or titantium alloys—which can withstand air friction heating at more than 2,000 miles per hour and still be produced at a reasonable cost.

A new type of engine will have to be developed which will be efficient both at subsonic speeds and at Mach 2 and Mach 3. Military engines with their high fuel consumption and noise levels aren't practical for the job. For the first time, noise will be a design standard for a new aircraft engine. It will have to operate at sound levels which are tolerable in airport neighborhoods.

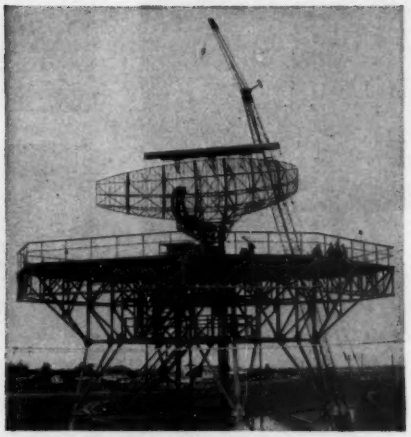
The sonic boom is another operating problem. A supersonic transport would push a shock wave along its flight path when cruising at 70,000 feet and it would be felt in a diminished form on the ground as a sonic boom. Arrangement of the airplane and engine layout, control of maneuvers and operating restrictions all will be employed to keep boom effects to a minimum. Much flight research already has been done in this area.

If the President, Congress and industry decide to move into a full-scale development program, the first Mach 3 airplane probably will be ready for airline service in the early 1970s. It could take any of a number of shapes now under discussion. One unusual approach now being researched for supersonic aircraft is a movable wing called variable sweep (see illustration) that can be extended laterally to increase lift and permit more efficient operation for takeoff and landing, then be swung aft to form a highly swept wing for more efficient supersonic cruise.

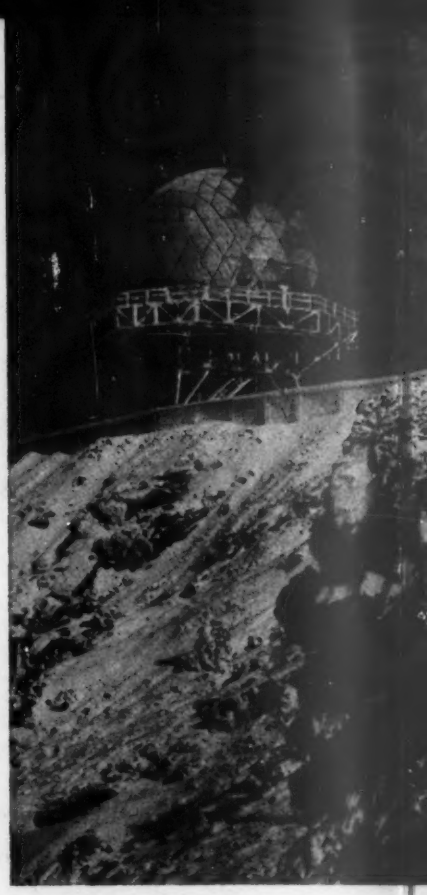
A substantial number of U. S. aeronautical experts favor developing an aircraft which would cruise at Mach 3, but others would prefer a transport that would fly in the Mach 3 region initially, then move up to Mach 3 plus. No fixed decision has been reached at this early stage in the investigation. But it is clear that the aircraft must be capable of both domestic and international operation and that it should have the greatest flexibility that can reasonably be developed.

Current estimates place passenger capacity at 100-150. The airplane probably will be about 200 feet long and have a wingspan of about 100 feet. For the Mach 3 configuration it will most likely weigh about 400,000 pounds—heavier than current jet transports but lighter than the B-52 bomber. Range probably will be 3,500 nautical miles.

Maintenance technicians need agility (*above; right*) as well as electronics skill to inspect towering navaids.



Beacon, which identifies airplanes, is added to top of long range radar antenna with an assist from a crane.

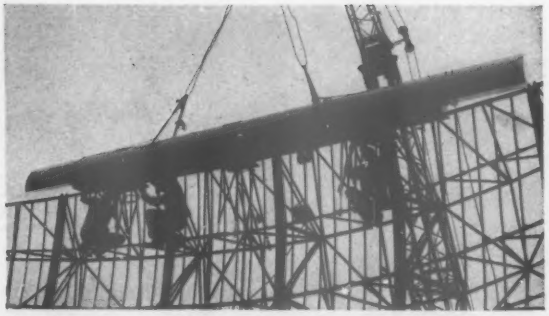


Air Route Surveillance Radar dome atop remote, snow-covered Francis Peak, Utah.

Guardians

Maintenance goes on night and day to provide dependable service.

Skill and dedication characterize the 4,000 electronics technicians of FAA's Aviation Facilities Service as they go about a demanding task—keeping some 3,000 navigation aids operating along 350,000 miles of the Federal Airways System. By snowshoe and boat, by jeep and airplane, they make their rounds of inspections on a regular basis—some every day, others twice weekly, once a week or monthly. So effective is FAA's preventive maintenance and swift repair work that the record of uninterrupted navigation aid service is a near-perfect 99 percent—a record that fills these men with justifiable pride.



Nimble technicians install radar beacon, a device that interrogates airplanes and identifies them for traffic control purposes.

VOR antenna shelter bubble gets a lift to its new Alaskan home on Fire Island.

Tuning and adjusting Remote Communications Air/Ground, Mt. Equinox, Vt.

s of the Airways

Technician adjusts Airport Lighting System as Air Force airplane comes in for a landing at Albany, N. Y., airport.

Bundled up against the cold, technician checks dome for antenna icing in winter.

New antenna goes aloft to top of 100-ft. tower for installation.

Nearly 800 airmen turned out for hangar flying session with FAA Administrator Halaby at Minneapolis-St. Paul's Holman Field.

Pilots hold an informal bull session with Halaby during a break in one of the hangar flying sessions designed to create more understanding.

FAA TRADES VIEWS WITH GENERAL AVIATION

Even some uncertificated airmen tagged along to hear FAA plans for helping general aviation achieve its potential.

A & P mechanics had a special session of their own with the FAA Administrator, heard him emphasize the responsible role they play in the growth and safety of aviation. Other sessions with mechanics are planned.

When general aviation met FAA at eight regional Air Share meetings last month, it marked a major step in a continuing campaign to promote better understanding of FAA programs and rules among airmen in this largest segment of U. S. aviation.

The proposed changes in the Civil Air Regulations on general aviation that were submitted for discussion were an outgrowth of more than 100 meetings in which airmen and FAA officials—led by Administrator N. E. Halaby—debated the problems facing general aviation.

At Air Share meetings held in each of the regions, and earlier sessions including 88 held simultaneously around the country in October, participants were urged to "air your views and share the benefits."

These relatively formal meetings were augmented by more informal hangar flying sessions Halaby launched in Van Nuys, Calif. a year ago. They were designed largely to encourage the non-professional pilots to exchange views on their problems and how the FAA can help solve them.

At Minneapolis-St. Paul, for example, 775 showed up on a day when poor weather hampered flying in that part of Minnesota. These airmen spent the day with Halaby, asking questions, offering suggestions and listening to FAA's views. He made it clear that FAA wants its general aviation rules to be practical and reasonable, but that these rules will be vigorously enforced. The Agency is determined to improve general aviation's safety record, both through education and enforcement.

Other hangar flying sessions were held in Denver, Boston, Houston and Fairview, Okla. A series of hangar sessions for maintenance personnel began with a February meeting in Washington.

The prepared agenda of last month's Air Share meetings was confined to discussion of proposed changes in the Civil Air Regulations.

One of these was the proposal to specify sub-classes of aircraft in the interest of flying safety. For example, aircraft without retractable landing gear, controllable propellers and wing flaps would be included in one sub-class, and aircraft which carry these features in another. Before a pilot who was experienced only in the simpler sub-class could carry passengers in the higher sub-class, he would be required to take transitional flight checks to qualify him for the more demanding performance. Three landings and takeoffs within the previous 90 days would be necessary for qualification.

Some other proposals would require:

A commercial pilot who did not have a notation of night flying experience on his certificate, to take a night checkout flight before carrying passengers for hire at night.

Pilot ratings for new types of aircraft that do not fit into present general classifications.

Helicopter pilots to select paths for takeoffs and landings that would permit emergency landings without undue hazard to passengers, or to persons and property on the ground.

All large aircraft designed for two pilots to have a co-pilot in the crew.

Cross-country experience in an airplane under actual or simulated conditions as a prerequisite for an instrument rating.

One instrument approach to the lowest authorized minimums as recent instrument flight experience. This could be accomplished under the hood or in a synthetic trainer.

There were proposals to require aircraft to carry additional instrument flight equipment—a carburetor heater, pitot tube heater, an alternate source of power for gyroscopic instruments, an alternate source of static pressure and vacuum gauge or means of power failure warning. Other proposals would require aircraft instruments and equipment be in serviceable condition before a takeoff, and flotation gear for all aircraft flying over water with passengers—regardless of whether they were paying or non-paying passengers.

Also proposed were miscellaneous items affecting flight crew members during periods of physical deficiency, permission for student pilots to fly in furtherance of business and a clarification of the "share expense" rules for private pilots.

Air Share's next procedure will be a routine notice of proposed rulemaking and request for industry comment. It will conclude with publication of the new rules in the Federal Register with the dates they become effective—estimated at this time to be July 1963.

IMPROVED AIRMAN RECORDS SYSTEM PLANNED

FAA's plan for updating its airman and aircraft record system and keeping it current with automatic data processing equipment was discussed at the April Air Share meetings.

The proposed new system would be more effective in keeping track of the nation's airmen and their skills. This information is needed to determine current and future demands on the National Aviation System so such programs as the Project Beacon modernization of the airspace utilization system can be intelligently planned and implemented.

Up-to-date records also would permit the FAA to pass safety information along more effectively. And this data on airmen and the air fleet is essential in planning the role of civil aviation in a national emergency.

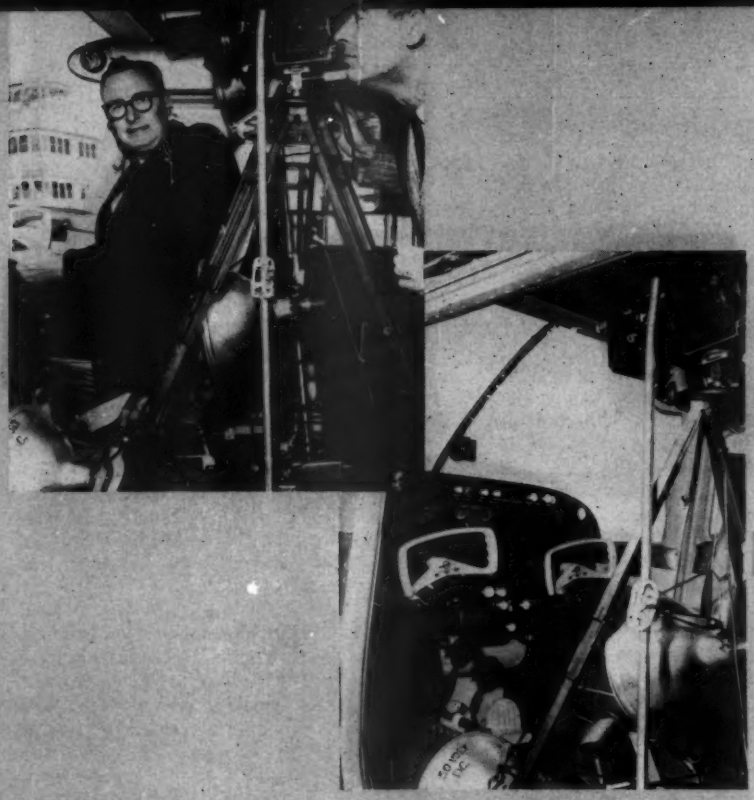
Over a two year period FAA would issue new certificates to airmen in every category upon receiving a simple application. No examination would be involved.

The new certificate, a small plastic card resembling the ordinary commercial credit card, would carry all of the airman's certificated privileges, his medical certificate and his social security number. It would be valid for two years and could be renewed through the mail at anytime up to two years after it expired. Beyond that period, however, a suitable examination would be required in order to get another renewal.

Certificates for airmen who take periodic medical examinations would be renewed automatically at the time the examination is passed. Where some privileges require a medical exam and others do not, all privileges would be automatically renewed upon examination.

While FAA has requirements for medical exams and for proficiency, there is no means at present of maintaining central records for quick and efficient use. Since 1926, when they were first required, approximately 1,800,000 airmen certificates have been issued, all for an indefinite period. They are all in the files at the Aeronautical Center in Oklahoma City where the new system also will be maintained.

Comments on the changes in record keeping were requested from those attending the meetings, and there will be further opportunities for public comment as the plan moves through the formal rulemaking procedure.



Operation Little Guy: FAA scientists carry out photographic time and motion studies in their efforts to design an efficient cockpit environment.

Study Focuses on Aviation's Forgotten Man—

the pilot

FAA's Project Little Guy, aimed at developing a simplified cockpit layout for light aircraft, has been placed under the direction of Colin G. Simpson, an aeronautical engineer with extensive industry background.

Little Guy's goal is to make flying easier and safer for the non-professional pilot by developing a relatively simple aircraft, one that can be flown either VFR or IFR in the air traffic control system by a pilot who has had a minimum of training.

The entire aviation community will be invited to take part in the development program. This includes the military services as well as the National Aeronautics and Space Administration, the Flight Safety Foundation, manufacturers, airmen groups, airport operators and Federal, State and local aviation officials.

Little Guy envisions a pictorial display combining the functions of compass, artificial horizon, turn-and-bank indicator, altimeter and airspeed indicator. This will be augmented by a central navigational display showing aircraft position in relation to charts projected on a screen, auxiliary displays for engine performance and communications channels and one that will warn of impending trouble.

Also sought is a simpler control assembly than is now available. Such a system, FAA believes, can be produced and kept within the weight, size and cost limitations of general aviation aircraft.

The overall timetable is three years, with a tentative schedule of 18 months set for production of a flyable prototype.

Little Guy is essentially a program of government assistance to industry. The component parts of the systems will be fabricated and developed under contract, and the results of the research and development will be made available to future designers.

The entire aviation community will benefit from this comprehensive approach that will make flying easier, more efficient and safer for the average person. As a result, FAA looks forward to increased numbers of aircraft and pilots, greater utilization and enjoyment of the light airplane and expansion of the aviation industry generally.

PROJECT BEACON

SYSTEM DESIGN NEARS LAB MODEL EXPERIMENT STAGE

The initial system design for implementing Project Beacon—a long-range blueprint for modernizing the national airspace utilization system—will be ready next month.

This system design will be the first major milestone in FAA's implementation of the Project Beacon report recommendations. Next step will be development of an experimental working model of the recommended system at the National Aviation Facilities Experimental Center near Atlantic City, N. J.

The Beacon report, approved by President Kennedy last November, was the result of a detailed study of the nation's air traffic control and navigation system by an independent task force headed by Richard R. Hough, Vice President for Engineering, American Telephone & Telegraph Co. (*see* box).

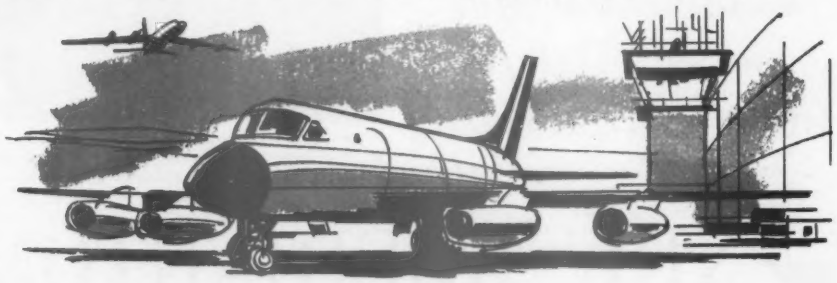
To meet anticipated growth in the demands of U. S. civil aviation the report outlined a five-year program of modernization. The President directed Administrator N. E. Halaby to implement Beacon recommendations that would move the airways program forward rapidly and efficiently. The job has involved a substantial reorientation of the research and development approach FAA formerly took as it prepared to cope with the increased, more complex air traffic of the future. Generally, the new approach makes use of proven tools and techniques, depends less on development of radically new equipment.

Moving quickly to implement the Beacon plan, the Agency set up a special System Design Team. This group of 14 men—each a leading expert in one phase of aviation—was assigned the job of formulating a working system design. The team also is responsible for modifying the program in light of the latest scientific and technological advances.

While this internal effort was under way, FAA awarded a $2.7 million contract to the Mitre Corporation, a nonprofit scientific organization. It will test and evaluate new air traffic control techniques.

Parallel contracts also have been awarded for development of SLATE, a lightweight, short-range general aviation airborne beacon of the type recommended in the Project Beacon report. The work is being done by Hazeltine Corporation's Technical Development Center at Indianapolis, and by Transco Products, Inc., of Los Angeles.

FAA is maintaining close liaison on the project with the aviation community. In February, the agency met with some 400 industry representatives to review airborne equipment requirements arising from the Beacon study. Meetings also were held in March with 19 aviation groups to discuss the impact of Beacon on each class of airspace user. Future meetings will be held at irregular intervals.



The basic research and development work on the system recommended by the team is expected to be substantially completed by January, 1964. The FAA then will begin making major changes in the airways system itself. Five years is the time needed to complete the transition.

This schedule, however, does not mean that the air traffic and navigation system will continue in its present form for the next seven years. The changes will be made gradually and some of the less complicated ones will appear soon. These improvements include increased use of radar and extension of positive control.

A major consideration of the report was the issue of integrating the traffic and air defense systems. It recommends that only the radars of the air defense (SAGE) system be adapted for air traffic control. Modification and use of the SAGE Direction Centers were not deemed desirable.

Beacon further advocates that the traffic control system not depend on navigational information from pilots. Aircraft positions would be pinpointed on the ground, with radar as the primary tool. This system would sharply reduce the number of pilot position reports and lessen congestion on the radio frequencies used for pilot-controller messages.

Altitude information would be obtained through use of altitude reporting beacon transponders carried in the aircraft. The report concludes that no three-dimensional radar or other height finding equipment offers sufficient promise of doing this job from the ground.

All aircraft above 12,500 pounds would be required to carry long-range beacons. This category includes transports and large executive aircraft.

Short-range beacon equipment for terminal area use appears feasible at a price not over $500, the report says. This SLATE equipment already is under development. When available, it would be required on all small aircraft landing at controlled airports in certain terminal areas.

The ATC ground system environment proposed in the report would utilize general purpose computers for both en route and terminal control operations to process flight plans, issue clearances, investigate conflicts, produce display information, establish landing sequences and perform other routine tasks.

GUIDING BEACON

A special Technical Advisory Board has been established by FAA to guide its efforts in carrying out the recommendations of the Project Beacon report.

Chairman of the group is Richard R. Hough of the American Telephone and Telegraph Company, who also served as Chairman of the Project Beacon Task Force. The Executive Secretary is Joseph D. Blatt, Director of the FAA's Research and Development Service.

Other members of the board are Joseph J. George, Superintendent of Meteorology, Eastern Air Lines; Dr. Nathan I. Hall, Vice President, Systems Development Laboratories, Hughes Aircraft Company; Professor Robert Horonjeff, Institute of Transportation, Traffic Engineering, University of California; Dr. Carl F. J. Overhage, Director, Lincoln Laboratories, Massachusetts Institute of Technology; and Carlos C. Wood, Engineering Manager, Sikorsky Aircraft.

The group will oversee the work being performed in the Beacon program to assure maximum use of existing and new technology. Members meet with FAA about once a month.

Welcome Mat Out for General Aviation at

NEW WASHINGTON AIRPORT

A new gateway to America takes shape near Washington where Dulles International Airport is under contruction. In front of the soaring terminal building adjacent to the control tower, shown here ribbed in scaffolding, facilities for general aviation are planned.

Washington's new International Airport will be the largest civil airport in the world when it opens next fall, but its operations will not be restricted to jet airliners arriving at this gateway to the Nation from exotic places.

It is estimated that approximately 11,700 general aviation takeoffs and landings will be made at the airport in 1963, growing to 17,000 by 1967.

To accommodate this traffic, FAA has set aside 30 acres for general aviation service facilities and hangars. Provision is made in the airport's master plan for a 2,400-foot paved apron solely for general aviation use. As a beginning minimum, FAA is building a 500-foot paved apron to within 30 feet of the proposed hangars. They will be constructed by private operators holding long term leases and paying ground rent to the government.

So far, no fixed base operators have been selected. FAA is studying proposals submitted at the Agency's request last February. Large and small operators have responded and one or more may be selected.

Base operators will be required to furnish flight line servicing including sale of aviation gasoline and oil; apron service including ramp assistance and itinerant parking within the general aviation hangar area; airplane repair and maintenance; airplane sales and rentals; and non-scheduled air taxi, contract and charter flight service with airplanes under 12,500 pounds, including multi-engine airplanes.

Each operator will not be required to furnish all these services; however, all these services will be available at the airport—whether by one operator or several.

Primary flight, general flight and ground school training will not be permitted. Transition and instrument flight training, however, will be allowed if it is related to airplane sales.

If more than one fixed base operator is selected by FAA, one will be chosen to act as an agent of the Government to collect landing fees and to provide other support functions. These include general aviation ramp service on the airport's feeder apron located on the south side of the terminal building; aircraft crew transportation (other than airline); transportation of passengers not served by the airport's mobile lounge system; collection of airplane parking fees; and airplane towing.

In return for his services, the selected operator will be permitted to keep a reasonable percentage of all landing and parking fees collected, and will be permitted to establish reasonable charges for other services.

Landing fees will be collected from all general aviation aircraft except those privately-owned and not used for business purposes.

In addition to the 30 acres set aside for general aviation, a ten-gate apron area approximately 1225 feet long, parallel to the terminal building, will be provided for general aviation executive and local service airline aircraft. Enclosed concourses along the apron will lead passengers in and out of the terminal via gates on either side of the southern end of the central wing which houses the airport control tower. After discharging its passengers, executive aircraft will taxi to the general aviation area for fuel and service.

Itinerant travelers will not have far to go for hotel accommodations. About one-half mile north of the terminal building, a $4 million, 200-room hotel is under construction. Features of the hotel include a swimming pool, a restaurant overlooking the airport lake and several large banquet rooms. Room rates will be comparable with other first class hotels in the Washington area.

Letters to the Administrator

Over the past year, the FAA has been working hard to improve relations and establish better communications with the aviation community. Administrator N. E. Halaby recently wrote a letter to airmen as part of this effort to report on FAA programs and their progress. Among the responses were the airman comments published here.

FAA Aviation News welcomes comments from the aviation community. We will reserve this page for an exchange of views. Please keep them brief. No anonymous letters will be used, but names will be withheld on request.

• Air Marking

I wonder if there is any kind of program under FAA or another agency that has to do with the marking of towns and communities in letters large enough to be seen from the air. In flying VFR over Texas there have been many times when I would like to have known the name of the town over which I flew. I would certainly like to help get communities everywhere to mark some places in order that the pilot who gets off course might know where he is.

A. G. Adams
Austin, Texas

FAA has no funds appropriated for air marking, but the Agency encourages such projects. Its Air Marking Section, headed by Blanche Noyes, has long campaigned around the country to induce local communities and civic-minded groups to carry out air marking programs.

• Aid to Airports

There is one topic that I believe should be looked into. That is the possibility of extending Federal aid to some operators of private air fields where the need can be proved.

I also suggested restricting the use of Federal funds by some of the small out-of-the-way towns that are using municipal fields for private clubs and golf courses and are restricting pilots from the use of airport facilities partially erected with Federal funds.

It seems that a group of people vitally important to general aviation are being overlooked, while others not the slightest bit interested in aiding aviation are getting the benefit of funds that should be channeled into improving the lot of airmen and operators.

I wish to extend my thanks to all your staff, most of all to the Medical Advisory Board which facilitated my receiving my class three medical certificate.

Kenneth D. Copeland
Omaha, Neb.

When Federal funds are granted under the Federal Aid to Airports Program, the airport must be available for use by the public. The Agency will not obligate funds under any other conditions.

Under the terms of the Federal Airport Act we are limited to providing financial assistance only to airports under public ownership. There are, however, other channels of assistance for the private owner, including the Small Business Administration in the Department of Commerce.

• Numbering Airplanes

I own a 1932 Waco Cabin in which I learned to fly and have rebuilt it at great effort and expense. I'm sure that the ruling on number identification is a good rule, in the interest of everyday flying at controlled airports. But for weekend grasshopper flying of an original antique, it certainly spoils the originality and looks. I'm sure other antique fanciers feel the same way.

B. R. Seifert
Hopewell Junction, N.Y.

Under certain circumstances it is possible to secure an exemption to retain original aircraft markings. Your nearest FAA District Office will be very happy to assist you in determining whether you qualify for such an exemption and, if you do, in helping to secure it.

• Questions Blue Seal

A little IFR is certainly not the answer (to weather accidents); it's more likely to aggravate the situation and at the wrong stage of experience. When a pilot has a lot of VFR experience and is no longer kept down by marginal VFR when the reports aren't too bad, with the Blue Seal he may really stick his neck out. With considerably less experience he would be much more cautious.

George V. Caesar
Harbor Beach, Mich.

FAA agrees that a little knowledge is a dangerous thing. The purpose in encouraging a pilot to acquire some instrument flying capability, however, is to give him a skill that would enable him to get out of potentially dangerous weather which he might inadvertently encounter. We certainly hope that no pilot would deliberately get involved in IFR flying on the basis of having secured a limited instrument flying capability.

• Only on Saturday

I fly a limited 200-odd hours a year, mostly on weekends. I almost never fly cross-country without a VFR flight plan.

FAA personnel at Allentown, Reading, Wilkes-Barre, Harrisburg and Williamsport were very helpful when I made a night emergency landing in a pasture at 11:19 p.m. one night. For their assistance I visited them later and thanked them. They had pinpointed my position perfectly!

I would like to participate in your meetings with pilots. I can meet only on Saturday and would like to suggest that you schedule them on that day if convenient.

Russell B. White
Clarks Summit, Penna.

We know that the FAA personnel who assisted you with your emergency landing appreciated your taking the time to thank them, particularly since they already felt rewarded by your safe landing. On scheduling Saturday meetings, we are making every effort to arrange the schedule so that, at one time or another, every interested airman will have the opportunity to participate.

• See-and-Be-Seen Obsolete?

I think it absolutely vital that we reverse the trend toward the thesis that "see-and-be-seen" is obsolete. The vast majority of flying done today is conducted VFR and in my opinion always will be. We have just about reached the point right now where we can reasonably expect the 100-hour pilot to be able to cope with present rules. Any further complications will only confuse things, drive people away from flying and actually cause a safety hazard by having pilots blundering into areas where they are not supposed to be through ignorance of the rules.

It is absolutely vital that we retain the right to jump in our planes on a clear day and go where we want with a minimum of restriction and red tape. Think what would happen to car sales if there were rules requiring filing of flight plans. We realize the need for reasonable requirements of communications but question the need for a lot that is being talked about now in view of the truly excellent accident record over a 25-year period. I feel sure we can come up with some simple procedures, added radar advisory service that will increase safety without driving us out of the air. The see-and-be-seen pilot is the guy you should be trying to help, not hurt.

Samuel Freeman
Bedminister, N.J.

FAA appreciates your desire to feel free to use your plane whenever you wish with a minimum of restrictions and red tape. As far as possible we adhere to this objective. We are sure, however, you appreciate that the growth in general aviation complicates the problem. As for enjoying the same freedom as a car owner, the automobile driver must stop at traffic lights, conform to speed laws and in general obey the rules and regulations that govern traffic.

Unfortunately, we cannot share your feeling about the "excellent accident record" of general aviation. It is too high, although the aviation safety record does not, of course, nearly approach the automobile accident rate.

After decades of service devoted to aviation safety in the armed forces, famed cartoonist Robert Osborn, who created the Navy's ubiquitous "Dilbert," turns a deft pen in the direction of general aviation. His new character, "Molt," personifies the shortcomings of many a careless pilot. He appears on airport bulletin boards throughout the country, as well as on the next page.

WATCH OUT for MOLT! a pilot who flies when he's....

..tired... under the weather... cocky... or just plain foolish

MORE THAN 80% GENERAL AVIATION ACCIDENTS ARE DUE TO PILOT ERROR

Federal Aviation Agency

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